

## PERI-OPERATIVE DEXMEDETOMIDINE AND CHRONIC PAIN AFTER CARDIAC SURGERY

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**Background & Objectives:** Cardiac surgery is associated with 28-56% incidence of chronic sternotomy pain, with resultant significant health and economical burden.<sup>1,2</sup> Dexmedetomidine (Dex), a centrally acting  $\alpha$ -2a adrenergic agonist, is being used increasingly in the perioperative period. Pre-clinical studies showed that Dex plays a role in the descending inhibitory pain pathway.<sup>3</sup> Multiple trials suggested clinically relevant analgesic and opioid sparing effects.<sup>4</sup> We hypothesize that peri-operative Dex reduces the risk of developing ongoing pain 3 months after cardiac surgery.

**Materials & Methods:** We performed a prospective, parallel observational study including patients who underwent cardiac surgery. Exclusion criteria included ongoing pain for more than 3 months prior to the surgery and/or prescription of chronic pain medications or antidepressants, major psychiatric illness, salvage operation and previous thoracotomy or mastectomy. Dex was given from induction of anaesthesia at 0.7mcg/kg/hour and continued in ICU as clinically appropriate. Otherwise, standard care was given at the discretion of the treating team. Primary outcome was pain assessed 3 months after surgery through telephone survey. Secondary outcomes included peri-operative opioid consumption.

**Results:** 64 patients received Dex (DEX group), while 69 patients received standard care (STD group). Pain persisted 3 months post sternotomy in 10(18%) vs 19(35%), ( $p=0.04$ ) in the DEX and STD groups respectively. This remained significant after adjusting for age, gender and operative procedure. Mean age for the two groups were 58.4 and 68.6 ( $p=0.013$ ) between DEX and STD respectively. There was no significant difference in other baseline characteristics including sex, weight, types of surgery, bypass time, and operation time. During ICU stay, median (IQR) morphine consumptions were 4 (0-16) vs 14 (0-28) mg, ( $p=0.015$ ) and fentanyl 0 (0-4) vs 0 (0-245) mcg, ( $p=0.05$ ) in the DEX and STD groups respectively.

**Conclusion:** Peri-operative Dex significantly reduced postoperative intravenous opioid requirement and reduced pain 3 months after cardiac surgery.

**References:**

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**Disclosure of Interest:** None declared

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